



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,380	07/06/2005	Motohiro Arifuku	1303.45151X00	8734
20457	7590	03/16/2011		
ANTONELLI, TERRY, STOUT & KRAUS, LLP			EXAMINER	
1300 NORTH SEVENTEENTH STREET			VDAYAKUMAR, KALLAMBELLA M	
SUITE 1800			ART UNIT	
ARLINGTON, VA 22209-3873			PAPER NUMBER	
			1736	
			MAIL DATE	
			DELIVERY MODE	
			03/16/2011	
			PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/541,380

Applicant(s)

ARIFUKU ET AL.

Examiner

KALLAMBELLA VIJAYAKUMAR

Art Unit

1736

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 19 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 24 and 25 is/are rejected.
- 7) ☒ Claim(s) 19 and 22-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

- Applicant's amendment filed 12/30/2010 has been entered. Claims 1 and 19 were amended. Claims 10-18 and 20-21 were cancelled. New claim-26 was added. Claims 1-9, 19, and 22-26 as amended are currently pending with the application.

Election/Restrictions

Newly submitted claim 26 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Although Claim-26 begins with a preamble of "The circuit connecting material according to claim-1", entire body of the claim is drawn to a structure that was restricted in the election-restriction mailed 10/06/2008 and was a non-elected invention wide the election received 11/06/2008.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 26 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

- The examiner has provided the PTO-892 containing US 2004/0266913 that was used as an English Translation of WO 03/022949 in the last office action. The examiner regrets for this omission and any inconvenience caused to the applicants.

Art Unit: 1736

Claim Rejections - 35 USC § 102

Claim Rejections - 35 USC § 103

- The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

- The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1, 4-9 and 24-25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamaguchi et al (WO 03/022949 as evidenced by US 2004/0266913).

The recitation of "wherein the circuit connecting material has a property that material *can electrically connect...* first and second circuit members," in claim-1 has been given little patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478,481 (CCPA 1951).

In the instant case, the preamble merely recites the intended use of the composition, wherein the prior art can meet this future limitation by merely being capable of such intended use.

Yamaguchi et al teach an anisotropically electroconductive adhesive film (ACF) interposed between electrodes by thermo-compression bonding (0042-0048; 0051-55; 0010-0041) comprising an insulative binder of epoxy resin, glycidyl containing phenolic-novalk epoxy, phenoxy resin, an acid amide, a catalyst, and electro-conductive Au/Ni/divinylbenzene particles with a particle size of 5 micron. The ACF film had a thickness of 20 micron. The connection resistance was about 1.6-2.2 ohms and the adhesive strength ranged from 590-703 N/m² <0.59-0.7 GPa> (Pg-6, Table-1) and these values are either same or substantially same as that taught by the applicants (See Spec-Tables, Declaration -Tables). With regard to the properties of the conductive particle in claim-1, and the cured product in claims 1 and 6, the prior art product, composition and the components are either same or substantially same as that claimed by the applicants and having same utility as the interconnecting material and Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In *re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). All the limitations of the instant claims are met.

The reference is anticipatory.

In the alternative that the disclosure by Yamaguchi et al be insufficient to anticipate the instant claims, the instant claimed composition and method steps nonetheless would have been obvious to a person of ordinary skilled in the art over the disclosure because the reference teaches each of the claimed ingredients within the composition and a method of using it, and it has the same common utility as connecting material. The burden is upon the applicant to prove otherwise. In re Fitzgerald, 619 F.2d 67, 205 USPQ594 (CCPA 1980).

2. Claims 2-3 are rejected under 35 U.S.C. 103(a) as obvious over Yamaguchi et al (WO 03/022949 as evidenced by US 2004/0266913) in view of Sony (JP 2001-189171).

The disclosure on the composition of the anisotropic conductive adhesive as set forth in rejection-1 is herein incorporated.

The prior art is silent about the thickness of the metal coating layers per the claims 2-3.

In the analogous art, Sony (JP-171) teaches an ACF film comprising a dispersion of conductive particles in an insulating binder of epoxy/epicoat/, acrylic resin including hydroxyls and phenoxy resin (P-0010, 0013; 0036). The conductive particles were polymer particles of styrene, silicone, acrylic, benzoguanidine, polyolefin and rubber surface coated with a metallic layer comprising one or at least two of Ni, Au, Ag, and Cu and like with a particle size of 5 and 10 microns. The metallic layer had a thickness of 10-200 nm (P 0015-0016; 0036, 0038). The film thickness for gold was 10-30 nm. The conductive particles had hardness of 1000-8000 N/mm² (1.0-8 GPa) that can be appropriately selected (P-0020; 15). The passivation film 5 is adjacent and thicker than the electrode-4 and the bonding structure obviously meets the limitation of the structure in the claims (Abstract).

Ref claims 2-3, it would have been obvious to a person of ordinary skilled in the art to coat the polymer core of Yamaguchi with the metal layer thickness taught by Sony with the expectation of

Art Unit: 1736

obtaining same results and reasonable expectation of success because the teachings are in ACF containing metal encapsulated polymer core conductive particles for circuit connection applications.

Claim Objections

Claims 19 and 22-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record neither teaches nor fairly suggest a method of manufacturing a circuit member connecting structure by a combination of process steps, components processed, structure derived and its characteristics.

Response to Arguments

Applicants arguments filed 12/30/2010 have been fully considered and not persuasive. In response to the argument that the preamble should be given patentable weight (Res, Pg-8, Last Para), the instant claims are drawn to a specific composition having components with specific characteristics that will yield specific characteristics upon curing, and the preamble clearly recites “can connectcircuit members” that is an intended use and If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention’s limitations, then the preamble is not considered a limitation and is of no significance to claim construction <See MPEP 2111.02>.

In response to the argument about the prior art being silent about certain properties, while the instant claimed compositions exhibit superior properties in view of the declaration filed June 30, 2010 (Res, 9-13; Pg-18, Para-1), the prior art composition discloses an anisotropically conductive tape containing either same or substantially same binders and conductive fillers of Au/Ni/divinylbenzene. and

Art Unit: 1736

further has same elastic modulus after curing and it is either same or substantially same as that claimed by the applicants and Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. See <MPEP 2112.01[R3]-I>.

In response to the connection resistances being superior over Yamaguchi (Pg-19-20), it is not the limitation of the instant claims, and although "That claims are interpreted in light of the specification does not mean that everything in the specification must be read into the claims." Raytheon Co. v. Roper Corp., 724 F.2d 951, 957, 220 USPQ 592, 597 (Fed. Cir. 1983), cert. denied, 469 U.S. 835 (1984). <See MPEP 2106 [R-6]-IIC>

For the reasons set forth above applicants fail to patentably distinguish their composition over prior art.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 1736

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KALLAMBELLA VIJAYAKUMAR whose telephone number is (571)272-1324. The examiner can normally be reached on M-F 07-3.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 5712721358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KMV/
March 12, 2011.

/Stanley Silverman/
Supervisory Patent Examiner, Art Unit 1736